What is claimed:

1. A composition for enhancing images obtained by medical diagnostic imaging procedures comprising in combination:

one or more particles selected from the group consisting of gadolinium, zinc, magnesium, manganese, calcium and compounds thereof; and

one or more microsphere shells encapsulating one or more particles,

wherein the composition is effective for enhancing images obtained using more than one imaging modality as compared to images obtained without the composition.

2. A composition in accordance with claim 1, wherein the one or more particles are selected from the group consisting of gadolinium and gadolinium compounds.

3. A composition in accordance with claim 2, wherein the one or more particles are gadolinium oxide.

4. A composition in accordance with claim 2, wherein the gadolinium particles and gadolinium compound particles are spherical.

5. A composition in accordance with claim 2, wherein the gadolinium particles and gadolinium compound particles have diameters of no more than about 450 angstroms.

6. A composition in accordance with claim 4, wherein the gadolinium particles and gadolinium compound particles have diameters of no more than about 450 angstroms.

7. A composition in accordance with claim 1, wherein the microsphere shells include a protein substance.

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8. A composition in accordance with claim 1, wherein the microsphere shells are selected from the group consisting of bovine serum albumin, human serum albumin, lipids, liposomes, pepsin, gelatin, dextrose, dextrose-albumin, an antibody shell, and combinations thereof.

9. A composition for use in vivo during neutron capture therapy comprising a gadolinium particle or a gadolinium compound particle encapsulated in a microsphere shell.

10. A composition in accordance with claim 9, wherein the gadolinium particle or gadolinium compound particle is spherical.

11. A composition in accordance with claim 10, wherein the gadolinium compound particle is gadolinium oxide.

12. A composition in accordance with claim 9, wherein the microsphere shell includes a protein substance.

13. A composition in accordance with claim 9, wherein the microsphere shell is selected from the group consisting of bovine serum albumin, human serum albumin, lipids, liposomes, pepsin, gelatin, dextrose, dextrose-albumin, an antibody shell, and combinations thereof.

14. A method of enhancing medical diagnostic imaging modalities comprising administering in vivo a composition comprising a suspension of microspheres encapsulating gadolinium particles in an amount effective for enhancing images obtained by more than one imaging modalities.

15. A method in accordance with claim 14, wherein the imaging modalities include ultrasound, magnetic resonance and computed tomography.

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16. A method of neutron capture therapy for treating cancerous cells comprising administering to a patient a composition including a plurality of gadolinium particles or gadolinium compound particles encapsulated in microsphere shells to a predetermined area containing the cancerous cells and applying a source of thermal neutron irradiation to the predetermined area in a manner effective for causing the gadolinium particles or gadolinium compound particles to release radiation for treating the cancerous cells.

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